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ABSTRACT

A study explored the structures of language learners' beliefs about learning in general, or epistemological beliefs, and their beliefs about language learning in particular. Subjects, 97 college students learning Japanese at various levels in midwestern universities, completed a 132-item belief questionnaire. Factor analyses identified four dimensions of general epistemological beliefs that are comparable to those found in by M. A. Schommer in earlier studies, and 6 dimensions of language learning beliefs. Although there were some significant correlations, these belief dimensions were for the most part uncorrelated, which indicates that students' general epistemological beliefs and language learning beliefs can be characterized as a complex system consisting of multiple independent dimensions. (Contains 31 references and 5 tables of data.) (Author/RS)

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Epistemological Beliefs and Language Learning Beliefs: What Do Language Learners Believe About Their Learning?

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Abstract

This study explored the structures of language learners' beliefs about learning in general, or epistemological beliefs, and their beliefs about language learning in particular. Ninety-seven college students learning of Japanese as a foreign language completed a 132-item belief questionnaire. Factor analyses identified four dimensions of general epistemological beliefs that are comparable to those found by Schommer (1990; 1995), and six dimensions of language learning beliefs. Although there were some significant correlations, these belief dimensions are for the most part uncorrelated, which indicates that students' general epistemological beliefs and language learning beliefs can be characterized as a complex system consisting of multiple independent dimensions.

The study of individual differences in learning has been a major concern among both educational psychologists and language learning researchers. It is commonly recognized that some students integrate information and others do not (Anderson, 1984), that some students oversimplify information and others do not (Spiro, Vispoel, Schmitz, Samarapungavan, & Boerger, 1987), and that some learners have more flexible criteria for monitoring than do others (Yussen, 1985). For language learners as well, some students are able to attain higher proficiency in a target language than are others (Fillmore, Kempler, & Wong-Fillmore, 1979; Naiman, Frohlich, Stern, & Todesco, 1978; Rubin, 1975, 1981; Skehan, 1989, 1991).

Why do students differ in the way in which they learn? Why are some learners more successful at using effective learning strategies than are others? Recently, the study of individuals' epistemology, beliefs about the nature of intelligence, knowledge, and learning, has received researchers' attention to partially account for individual differences in learning. The conceptualization of learning has drastically changed in the last two decades. In new theories of learning, learning is perceived as an active process initiated by learners rather than a passive process: Knowledge is not handed down by authority but acquired by learners on their own. There is no "right" way to acquire knowledge: It is a learners' job to determine how they should obtain necessary information and to evaluate the effectiveness of their strategies. Because students have different thoughts about learning or reasons for their own actions, they approach challenging situations in a different way.

Educational research shows that learners' beliefs significantly influence their comprehension and learning in complex subject domains, and their persistence and effectiveness in learning. Perry's (1968) classical epistemological study developed a linear model of college students' epistemological development in which students' epistemological beliefs go through nine stages from dualistic (fact-oriented) thinking to relativistic (context-oriented) thinking. According to Perry, when students enter college, they perceive knowledge as being absolute and certain and as being handed by authority. As they acquire more knowledge, they begin to understand that knowledge is relative to context and there are multiple possible ways of viewing it. Drawing upon Perry's conceptualization of learners' epistemology, Ryan (1984) investigated the effects of college students' epistemological beliefs on their comprehension monitoring. Students who have dualistic thinking feel that they understand

learning materials better when they can recall specific facts, whereas those who have relativistic thinking feel that they understand materials better when they are able to apply facts to new situations. Furthermore, relativists reported that they used multiple criteria to check their comprehension, and dualists used a single criterion.

While Perry's model assumes that all learners go through the same epistemological development (i.e., from fact-oriented thinking to context-oriented thinking), Schommer (1990) has demonstrated that the structures of individuals' beliefs are not so simple, but are characterized as a complex system consisting of multiple independent dimensions. Using a questionnaire method, Schommer identified four distinct dimensions reflecting the degrees of college students' beliefs in innate ability, simple knowledge, quick learning, and certain knowledge. In addition, Schommer has shown that students' beliefs in these dimensions are relatable to their unsophisticated learning behaviors: Students who believe that learning is quick or all-or-nothing tend to oversimplify information and overestimate their abilities, and those who perceive knowledge as being fixed and absolute tend to write an inappropriately absolute conclusion for the passage they read. The most important findings of Schommer's research are that individuals' epistemological beliefs cannot be reduced to a single dimension and that students do not necessarily have sophisticated beliefs in all dimensions.

Dweck and Leggett (1988) have also shown that students' adaptive (learning-oriented) and maladaptive (performance-oriented) behaviors can be accounted for by their implicit theories about intelligence and ability. Students who have an incremental theory of intelligence, the belief that intelligence is increasable and controllable, are more likely to view effort as a means for manifesting their ability than those who have an entity theory of intelligence, the assumption that intelligence is fixed and uncontrollable. Consequently, students holding the incremental theory are more persistent, show positive responses to failures, and try out multiple strategies when they encounter challenging problems. Interestingly, maladaptive and adaptive learning patterns are observed among students who are initially equal in ability (Diener & Dweck, 1980). This suggests that the effects of learners' beliefs on their academic performance do exist independently from those of their ability.

Students' beliefs reflect their prior learning experiences (Schommer, 1990) and the way they define a learning task (Elbaum, Berg, & Dodd, 1993). Jehng, Johnson, and Anderson (1993), for

example, demonstrated that students in different majors had different epistemological beliefs. This suggests there is an interactive relationship between the context in which students learn and the development of their epistemological beliefs.

Although the study of epistemological belief sheds new light on individual differences in learning, it is still not clear to what extent learners' epistemological beliefs in general could be extended to a specific language learning domain. Learners who do not believe in authority in general, for instance, may show strong faith in native speaker intuitions when it comes to the grammaticality of sentences in a foreign language.

Second language acquisition (SLA) researchers have also paid attention to language learners' beliefs about their learning to account for individual differences their achievement in a target language, but empirical findings are still fragmentary. Research shows that college students are able to reflect upon their own language learning and the efficacy of the strategies they use (Wenden, 1986, 1987), and that their beliefs about the nature of language learning seem to influence their choice of the linguistic information to which they pay attention and (Abraham & Vann, 1987; Grotjahn, 1991; Horwitz, 1987, 1988; Polizer, 1983). A strong belief in the efficacy of risk-taking and tolerance of ambiguity, for instance, could predict students' oral proficiency (Ely, 1986, 1989). Furthermore, the previous individual differences studies consistently showed that successful language learners more frequently use an analytic approach to a learning task than a holistic approach (Fillmore, Kempler, & Wang-Fillmore, 1979; Freyd & Baron, 1982; van Daalen-Kapteijns & Elshout-Mohr, 1981), which may reflect successful learners' beliefs in the efficacy of paying attention to individual elements.

While the validity of self-report data is often questioned by several researchers (e.g., Seliger, 1983; Skehan, 1989), Cohen (1983) brings in a new perspective on self-report data in language learning research. According to Cohen, successful learners, who tend to have superior abilities to decontextualize linguistic items and study them analytically, have detailed and organized thoughts about their language learning. As a result, they are capable of using effecuve strategies and are able to reflect on their language learning experiences. In contrast, less successful learners lack either the verbal abilities or the successful learning experiences which are demonstrated by successful learners. Consequently, they cannot account for their own learning experiences retrospectively. Cohen thus

argues that reporting one's own strategies and success in language learning are basically the same: Students cannot report strategies they do not know or cannot use. If this is the case, what learners report as effective strategies is relatable to their learning behaviors to some extent.

This study was designed to explore the structure of language learners' beliefs and the relationship between their beliefs and their performance. The present research first examines how language learners' beliefs about learning in general and language learning in particular are structured, extending Schommer's (1990, 1995) technique to language learning, and how these two belief domains are related. Then, it investigates the relationship between language learners' beliefs and their actual academic performance.

Method

A questionnaire survey was administered to learners of Japanese to identify an interpretable number of dimensions that partially describe the picture of foreign language learners' beliefs. These belief dimensions were converted into variables in the subsequent analyses which examined the relationship between language learners' beliefs and their academic performance.

Participants

Ninety-seven college students learning Japanese at various levels in midwestern universities participated in this survey. Their demographic information is summarized in Table 1.

Procedure

The participants received a copy of the questionnaire during regular class hours. They were asked to complete it at home and bring it to their instructors the following day.

Belief Questionnaire

A 132-item belief questionnaire was prepared for the survey. The questionnaire consisted of three parts: (a) a 40-item epistemological belief questionnaire; (b) a 92-item language learning belief questionnaire; and (c) a student characteristics survey. For the epistemological belief questionnaire, this study used a questionnaire for middle school students invented by Schommer (1995). Questions in the epistemological questionnaire were generated based on the following five hypothesized beliefs (a short terminology of each belief is given in parentheses):

1. Knowledge is simple rather than complex (Simple Knowledge)
    a. Avoid ambiguity
    b. Avoid integration
    c. Seek a single answer
    d. Simple knowledge
2. Knowledge is certain rather than tentative (Certain Knowledge)
3. The ability to learn is innate rather than acquired (Fixed Ability)
    a. Innate ability
    b. Success is unrelated to hard work
    c. Fixed ability
4. Learning is quick rather than gradual (Quick Learning)
5. Knowledge is handed down by authority (Omniscient Authority)
    a. Dependence on authority
    b. Asking for help

It should be noted that each belief dimension has two ends and is identified by the name of one of the extremes. For instance, "Knowledge is simple rather than complex" represents a continuous belief dimension ranging from "knowledge is simple" to "knowledge is complex." In this presentation, this dimension is referred to by one of the extreme ends (i.e., Simple Knowledge).

92 language learning questions were constructed on the basis of the 16 hypothesized beliefs regarding the nature of language learning and the efficacy of learning strategies. Some beliefs were applications of Schommer's (1990) epistemological belief dimensions to language learning. The purpose of including these dimensions in the language learning questionnaire was to examine which aspects of learners' epistemological beliefs would be transferred into the domain of language learning. Some dimensions were inspired by previous studies on foreign language learners' beliefs (Ely, 1986, 1989; Horwitz, 1987; Politzer, 1983; Wenden, 1986). The others were based on the investigator's observations as a language instructor and what she often hears from students. One unique aspect of the Japanese writing system is the coexistence of phonographic scripts (i.e., two kinds of syllabary referred to as Hiragana and Katakana) and a logography (i.e., Kanji, Chinese characters borrowed to

Japanese). Since many learners of Japanese feel that Kanji is one of the most difficult part of learning Japanese, questions regarding the effectiveness of strategies to learn new kanji words were included in the language learning questionnaire. This belief dimension was named Vocabulary is Important because kanji constitutes a crucial part of Japanese vocabulary. The 16 hypothesized beliefs which were used as a guide to generate questions include:

1. The ability to learn a language is innate rather than acquired (Innate Ability)
2. Language learning is quick or all-or-nothing (Quick Learning)
3. Language is simple rather than complex (Simple Knowledge)
4. I avoid ambiguity and seek clear answers (Avoid Ambiguity)
5. I avoid integration to avoid confusion (Avoid Integration)
6. Language is unchangeable rather than changeable (Certain Knowledge)
7. I believe in what authority (e.g., teachers, textbooks, dictionaries, native speakers) says (Dependence on Authority)
8. Language learning is pretty much like learning other subjects (Language Learning is the Same)
9. Learning Japanese is difficult (Japanese is Difficult)
10. Learning vocabulary is the most important part of language learning (Vocabulary is Important)
11. Success is unrelated to effort (Effort is a Waste)
12. I pay attention to the whole rather than individual elements (Focus on the Whole)
13. Memorization is important (Memorization is Important)
14. I take a risk to learn to communicate (Risk-Taking)
15. Making mistakes does not help to learn (Cannot Learn From Mistakes)
16. Learning a language in a natural way is best (Learn the Natural Way).

In the epistemological questionnaire and the language learning questionnaire, students were asked to rate the degree to which they agreed or disagreed with each statement on a six-point scale.

The student characteristics questionnaire asked participants to provide information about their gender, age, school year, educational background, specialization, languages, nationality, previous

experience with Japanese and other foreign languages, motivation, goals, expected grades, the degree of their concern for grades, and the degree to which they thought what they learned in class is difficult. This questionnaire aimed to obtain more information about factors that possibly influence students' beliefs.

Results and Discussion

One way to identify an interpretable number of belief dimensions is to categorize similar items in the questionnaire into a small number of groups. This study used factor analysis, a technique for examining interrelationships among original variables, to determine how many factors are involved in students' responses on the questionnaire. In factor analysis, "factors" are often referred to as "common factors," unobservable, hypothetical variables which account for common features shared by items categorized into the same group.

Separate factor analyses were performed on the epistemological belief questionnaire and on the language learning questionnaire, with individual items as original variables. The analysis procedure was the same for each questionnaire. First, principal factor analysis using the squared multiple correlations was performed to estimate the number of factors to rotate. The eigenvalues and scree plot were examined before several rotations were tried. With promax rotations, a principal factoring extraction generated four interpretable factors that accounted for 13% of the variance of students' responses on the epistemological beliefs questionnaire. Similarly, a principal factoring extraction generated six factors that accounted for 30% of the variance of students' responses on the language learning questionnaire. These factors were given descriptive titles on the basis of items high in factor loading, an indicator of how much an item contributes to a given factor.

Four Factors for Epistemological Beliefs

Table 2 shows epistemological belief questions which had a factor loading greater than .35 or less than -.35. Items loaded under Factor 1 are concerned with a belief in quick learning. Thus, this factor was named Quick Learning. Items loaded under Factor 2 are concerned with a belief in the efficacy of being persistent. This factor was given the title Effort is a Waste. Items loaded under Factor 3 are concerned with learners' belief in certain, fixed facts described in textbooks. This factor

was given the name Certain Knowledge. Two questions loaded under Factor 4 are related to the belief that "scientists can get to the truth, if they try hard enough." This factor was named Truth.

Although the four factors identified in this study are not identical to Schommer's initial five epistemological dimensions, they are comparable to those found by Schommer (1990). Quick Learning and Certain Knowledge were identified by both studies. A belief in Effort is a Waste is closely related to Schommer's Fixed Ability which was conceptualized as "Success is unrelated to effort." Truth, the "scientists will eventually get to the truth, if they work hard" factor, was discussed as a subset of Certain Knowledge in Schommer, but the items loaded under Truth in the current study constitute a distinct factor in her previous study (Schommer, 1989) as well. The discrepancies between findings of these studies were due to the fact that Schommer used a priori subsets of belief dimensions as original variables while this study used individual questions as original variables. Despite minor differences, this study demonstrated that Schommer's belief dimensions could be identified from foreign language learners.

Six Factors for Language Learning Beliefs

Table 3 lists language learning belief questions which had a factor loading greater than .35 or less than -.35. Items loaded under Factor 1 are concerned with learners' willingness to take a risk and to make mistakes in order to learn to communicate. Hence, this factor was named Risk-Taking. Questions loaded under Factor 2 are related to the difficulty of learning kanji words. Therefore, this factor was named Kanji is Difficult. Items loaded under Factor 3 are concerned with an analytic vs. holistic approach to language learning. In constructing the questionnaire, this dimension was conceptualized as a belief in the efficacy of paying attention to the whole rather than to individual elements. However, since factor loadings were positive for an analytic approach and negative for a holistic approach, this factor was given the title Analytic Approach. Items loaded under Factor 4 are concerned with intolerance for ambiguity and learners' tendency to seek clear-cut answers. Therefore, this factor was named Avoid Ambiguity. Items 18, 19, 20 are related to a belief that learning Japanese is not as difficult as they say. Thus, Factor 5 was named Japanese is Easy. Loaded under Factor 6 are items concerned with the learners' belief in one-to-one correspondences

between two languages. This belief was interpreted as learners' tendency to look for single answers while learning a foreign language. Therefore, this factor was given the title Single Answer.

Relationships Between Epistemological Beliefs and Language Learning Beliefs

The second goal of this study is to investigate how language learners' general epistemological beliefs relate to their beliefs in the specific domain of language learning. To find answers to this question, Person correlation coefficients were computed for all combinations of the belief dimensions. To convert the factors identified by the factor analyses into variables, the means of high factor loading items were computed for each factor. .35 was used as the cutoff point: Items having factor loading less than .35, items that were not loaded under any factors, and items which were loaded under multiple factors were not included in the subsequent correlation analysis.

Table 4 is a correlation matrix between the dimensions of epistemological beliefs and beliefs about language learning. As Table 4 indicates, all correlations are relatively low, indicating that these belief dimensions are independent, distinct constructs. Interestingly, Kanji is Difficult and Japanese is Easy are not correlated with each other, which suggests that learners of Japanese think that kanji is difficult but this is not a good reason for determining that learning Japanese is difficult. This is probably because other aspects of Japanese, such as the sound system (the consonant-vowel combination), the sound-symbol regularity in kana, the small number of vowels, and flexible word order, are considered relatively easy by learners of Japanese, and override the difficulty of kanji when it comes to the overall difficulty judgment of learning Japanese.

However, Table 4 also shows some interesting relationship between language learners' general epistemological beliefs and their beliefs about language learning in particular. First, students' beliefs in certain knowledge in general (E3) is correlated with their attitudes towards seeking a single answer (L6) while learning a foreign language. This suggests that individuals' beliefs in certain, unambiguous knowledge are transferred in the domain of language learning and result in their beliefs in a one-to-one correspondence between two languages. Second, learners' beliefs in quick learning and fixed ability in general can be related to their attitudes about taking risks while learning to communicate in a foreign language. Quick Learning (E1) and Risk-Taking (L1) are negatively correlated, indicating that students who believe that learning is quick or all-or-nothing are less likely to

think that making mistakes helps them to learn a language. Furthermore, Risk-Taking (L1) is negatively correlated with Effort is a Waste (E2), suggesting that students who think that success is unrelated to effort are less willing to take a risk to learn to communicate. Third, although correlations are low, the dimensions of Quick Learning (E1) and Japanese is Easy (L5) are correlated with many of the other belief dimensions. This suggests that those who believe in quick learning in general tend to think that learning a foreign language is easy and that those who think that language learning is easy are the kind of students who generally believe that learning is quick or all-or-nothing.

Lastly, this study examined the relationship between language learners' beliefs and students' characteristic variables, daily performance, midterm exam scores, final exam scores, final course grades, course levels, the number of Japanese courses taken, expected grades, and the degree to which they perceive that what they learn in class is difficult (Table 5). Table 5 reveals the following relationships. First, beliefs in certain knowledge in general was associated with higher expected grades and lower perception of difficulty of Japanese. This suggests that some aspects of students' epistemological beliefs affect the way they define the difficulty of language learning.

Second, the dimension of kanji, a unique dimension to learning Japanese, was correlated with many of the class performance measures, indicating that how they define a certain aspect of language learning does influence their actual performance. Because correlation analysis does not allow us to draw a causal relationship, these correlations should be interpreted in both ways. It could mean that negative perceptions about kanji lead to lower performance in achievement tests and lower self-esteem. It could also means that unpleasant experiences with kanji characters in written exams influence the way learners of Japanese perceive kanji.

Third, Kanji is Difficult (L2) and Avoid Ambiguity (L4) are correlated with course levels and the number of courses taken. This means that the more learners study Japanese, the more they think that kanji is difficult and the less likely that they seek for simple, clear-cut answers. Again, this should be interpreted in two ways. The first interpretation is that advanced learners of Japanese are more aware of complexity of Japanese. It could also mean that students who have simplistic beliefs about language learning are not the kind of students who pursue the higher levels of proficiency.

In sum, these correlations suggest that both epistemological beliefs and language learning beliefs are related the way students define language learning, which eventually influence their academic performance.

Conclusions and Implications

The significance of the study of individuals' beliefs about language learning is that it contributes to our understanding of individual differences in the way they approach a second or foreign language. The present study has identified belief dimensions important to language learning that had not been detected in the previous epistemological studies. Like students' general epistemological beliefs, the structures of language learning beliefs can be characterized as a complex and multi-dimensional system. In addition, this study has demonstrated that, overall, epistemological belief dimensions and language learning dimensions are independent constructs, which indicates the existence of domain specific belief dimensions.

At the same time, the results have shown that language learners' epistemological beliefs in general are relatable to their beliefs about language learning in particular in an interesting way: (a) language learners' beliefs in certain, fixed knowledge in general are transferred into the domain of language learning; (b) learners' beliefs in perseverance in general is associated with their willingness to take a risk while learning to communicate in a foreign language; and (c) those who believe in quick learning in general are more likely to perceive foreign language learning as an easy task. Because correlation analysis does not determine the causal relations, these relationships should be interpreted in two ways. For instance, we can say that students who are willing to make mistakes also believe that learning is a gradual process and that working hard will pay off. This could also mean that those who believe in making effort in general do not mind taking a risk while learning a foreign language.

Furthermore, the correlation between learners' beliefs and their classroom performance suggests that both learners' epistemological beliefs and language learning beliefs can partially account for their achievement in a target language and, conversely, that what they learn from class may influence the way they perceive language learning. Language teachers and researchers, therefore, should keep it in mind that the nature of linguistic input and learning activities might influence the development of students' beliefs about learning in general, and language learning in particular.

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Table 1

Demographic Information About the Participants of Study Two

Category	Level	Proportion
Course Level	Introductory	.46
	Intermediate	.30
	Advanced	.24
School Year	Freshman	.18
	Sophomore	.25
	Junior	.26
	Senior	.18
	Graduate	.13
Major	East Asian studies	.16
	Business	.14
	Engineering	.35
	Computer science	.08
	Biology	.04
	Others	.18
	Not decided	.05
Gender	Male	.60
	Female	.40
Age	18-19	.27
	20-21	.39
	22-23	.14
	24-25	.08
	Over 26	.12
Ethnicity	Asian	.50
	Caucasian	.46
	Others	.04
Nationality	USA	.82
	Korea	.09
	India	.03
	Singapore	.03
	Britain	.01
	China	.01
	Japan	.01

Note. n=97.

Table 2

Four Factor Solution for Epistemological Beliefs with Items as Variables

	Items	F1	F2	F3	F4
	Quick Learning				
1	If I cannot understand something quickly, it usually means I will never understand it.	.64			
2	If I am ever going to be able to understand something, it will make sense to me the first time I hear it.	.61			
3	Successful students understand things quickly.	.54			
	Effort is a Waste				
4	If I find the time to re-read a textbook chapter, I get a lot more out of it the second time.		-.62		
5	It is hard to learn from a textbook unless you start at the beginning and learn one chapter at a time.		-.51		
6	What students learn from a textbook depends on how they study it.		-.48		
7	You cannot learn anything more from a textbook by reading it twice.		.50		
	Certain Knowledge				
8	Sometimes I don't believe the facts in textbooks.			-.71	
9	The only thing you can be sure of is that nothing is sure.			-.69	
10	You can believe almost everything you read.			.59	
11	Truth never changes.			.49	
	Truth				
12	If scientists try hard enough, they can find the truth to almost everything.				.75
13	Scientists can get to the truth if they just keep searching for it.				.74

Table 3

Six Factor Solution for Language Learning Beliefs with Items as Variables

	Items	F1	F2	F3	F4	F5	F6
Risk-Taking							
1	I don't mind making mistakes if I can learn to communicate.	.61					
2	If you don't understand something when you are learning Japanese within a short amount of time, you should keep trying.	.58					
3	You learn a lot by having mistakes corrected.	.57					
4	There must be an easy way to increase my knowledge of kanji drastically without spending too much time and effort.	-.54					
Kanji is Difficult							
5	Studying kanji involves much memorization.		.68				
6	Recognizing the meaning of kanji is easier than writing the character.		.64				
7	Learning kanji is one of the most difficult parts of learning Japanese.		.58				
8	I find it confusing that a kanji character has more than one pronunciation.		.47				.37
9	If Japanese use more kanji, it will be easier for learners to learn to read.		-.47				
Analytic Approach							
10	When studying kanji words, I try to think how each character is related to the meaning of the whole word.			.68			
11	When I study a new kanji character, I try to recognize its parts.			.68			
12	The component characters of a new kanji compound usually tell you more about the meaning of the word than the surrounding context does.			.56			

(table continues)

Table 3 (continued)

Items	F1	F2	F3	F4	F5	F6
13 Often, the surrounding context is more helpful than the component characters to infer the meaning of unfamiliar compounds.			-.53			
Avoid Ambiguity						
14 I get frustrated when the teacher's explanation is different from what my grammar book says.				.58		
15 I try to avoid topics which I feel I cannot discuss well in Japanese.				.55		
16 It is okay to guess the meanings of unknown words and keep reading even if you are not always right.				-.41		
17 It does not bother me much when the teacher uses a Japanese word I do not know.					-.41	
Japanese is Easy						
18 I do not think Japanese is as difficult as many people say.					.59	
19 Learning Japanese is not so different from learning other Western languages.					.58	
20 Students who do not do well in the Japanese class simply do not work hard enough.					.47	
Single Answer						
21 If you know the meaning of a Japanese word, you should be able to give the clear definition of it in your native language.						.56
22 If you understand a Japanese sentence completely, you should be able to translate it into your native language.						.53
23 Learning definitions word-for-word will help a student increase vocabulary knowledge.						.52
24 You do not have to believe everything that native speakers say about Japanese.						-.40

Table 4

Correlation Between 10 Belief Dimensions

		E1 Quick	E2 Effort	E3 Certain	E4 Truth	L1 Risk	L2 Kanji	L3 Analytic	L4 Ambig	L5 Easy	L6 Single
E1	Quick Learning	1.00									
E2	Effort is a Waste	-.28**	1.00								
E3	Certain Knowledge	.22*	-.11	1.00							
E4	Truth	.18	.07	.08	1.00						
L1	Risk-Taking	-.41**	-.42**	-.10	-.05	1.00					
L2	Kanji is Difficult	-.06	.02	-.00	-.01	.20*	1.00				
L3	Analytic Approach	.04	.04	-.01	.04	.16	.07	1.00			
L4	Avoid Ambiguity	.15	.08	-.10	.02	-.07	-.05	-.04	1.00		
L5	Japanese is Easy	.31**	-.15	.26**	.26*	-.10	-.07	-.21*	-.18	1.00	
L6	Single Answer	.24*	-.09	.51**	-.14	-.14	.04	.04	.14	.12	1.00

*$p < .05$. **$p < .01$.

Table 5

Correlation Between 10 Belief Dimensions and Student Characteristics Variables

	E1 Quick	E2 Effort	E3 Certain	E4 Truth	L1 Risk	L2 Kanji	L3 Analytic	L4 Ambig	L5 Easy	L6 Single
Daily Performance	.21*	-.12	.10	-.00	-.19	-.06	.10	-.12	.33**	-.09
Midterm Exam	.06	-.11	.15	-.02	-.15	-.25*	.15	-.26*	.19	-.05
Final Exam	.08	-.00	.07	.07	-.14	-.20*	.05	-.07	.18	-.10
Total Grade	.18	-.13	.11	-.06	-.18	-.10	.09	-.13	.24*	-.06
Course Levels	-.00	-.03	-.17	-.04	.17	.30**	.08	-.26*	-.03	-.15
# of Courses Taken	.10	-.08	-.07	-.23*	.04	.24*	-.05	-.26**	-.12	-.03
Expected Grade	.15	-.02	.32**	.09	-.10	-.21*	-.05	-.12	.41**	.10
Perception of Difficulty	-.19	.11	-.32**	-.14	.24*	.25*	.13	.16	-.46*	-.24*

*$p < .05$. **$p < .01$.